RECLAMATION

Managing Water in the West

Draft Environmental Assessment

Delta Cross Channel Right-of-way Transtower Lease Renewal

EA-07-128

U.S. Department of the Interior
Bureau of Reclamation
Mid-Pacific Region
South-Central California Area Office

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List of Acronyms, Abbreviations and Definitions of Terms

AGL	Above Ground Level
CESA	California Endangered Species Act
CNDDB	California Natural Diversity Database
CWA	Clean Water Act
DFG	California Department of Fish and Game
ESA	Federal Endangered Species Act
FAA	Federal Aviation Administration
FCC	Federal Communications Commission
ITA	Indian Trust Assets
MBTA	Migratory Bird Treaty Act
Reclamation	Bureau of Reclamation
SCCAO	South-Central California Area Office
SHPO	California State Historic Preservation Officer
State Parks	California Department of Parks and Recreation
Transtower	Transtower, Inc.
USFWS	United States Fish and Wildlife Service

Section 1 Purpose and Need for Action

1.1 Background

Transtower, Inc. (Transtower) is pursuing renewal of their existing tower lease due to expire in June, 2010. The current lease commenced in 1960 and is utilized by three television stations, KCRA – 3, KXTV – 10 and KOVR – 13, which broadcast throughout Sacramento County. The tower serves as a central component to the Emergency Broadcasting System for the Central Valley of California and is a vital mechanism in assuring continued communications during times of terrorist attacks, flooding and other natural disasters. It is also used by the County of Sacramento Sheriff's Department and several radio and cellular communications providers.

The broadcast range of the stations extends north to Sutter and Yuba counties; west to San Francisco; south to San Jose and Modesto; and east to El Dorado and Amador counties.

1.2 Purpose and Need

The purpose of the action is to allow continued, uninterrupted transmission by certain television stations, the Emergency Broadcasting System for the Central Valley of California, the Sacramento Sheriff's Department, and several radio and cellular communications providers.

1.3 Applicable Regulatory Requirements

The Proposed Action would require a formal consultation with the U.S. Fish and Wildlife Service (USFWS), and the Migratory Bird Treaty Act (MBTA) and Executive Order 13186 also apply to the Proposed Action. Transtower determined that no take would result under the California Endangered Species Act (CESA).

1.4 Potential Issues

This Proposed Action was categorically excluded from further analysis under the National Environmental Policy Act. The Proposed Action would largely just continue current activities, and would only involve limited amounts of disturbance, primarily associated with vegetation management, so most resources wouldn't be impacted. However, upon examination of a draft categorical exclusion checklist, potential extraordinary circumstances were identified with regard to biological resources (specifically, the potential for adverse impacts on the ESA-listed giant garter snake (*Thamnophis gigas*) and migratory birds (protected under the MBTA).

It should be noted that global climate change is not discussed in this document due to its lack of relevance to the alternatives. A change in weather patterns would not affect the need for a lease renewal, nor would such a change impact on-the-ground activities that would be conducted under the renewed lease. Likewise, as the area of effect does not include permanent aquatic areas or tidal marshes, there would be no impact under the No Action Alternative.

Section 2 Alternatives Including Proposed Action

2.1 No Action

Under the No Action Alternative, Reclamation would not renew its lease with Transtower. The current lease will expire in June of 2010. If the current lease were to expire without being renewed, the lease states "…the Lessee shall…deliver to the United States possession of the leased premises in like condition as when taken, reasonable wear and damage by the elements excepted…" Therefore, as the communication tower and associated buildings did not exist at the time the leased premises were taken, these structures would be removed and their maintenance would cease.

2.2 Proposed Action

Reclamation proposes to renew a lease with Transtower Inc., for land along the Delta Cross Channel, which contains an existing transmission tower and appurtenant structures. The proposed term of the lease is 10 years initially, with four successive extension opportunities, through June 30, 2060 (a total of 50 years). Please see Figure 1 for an overview of the project area.

Under the new lease, maintenance of guy anchors would continue to be consistent with essential historical practices such as:

1. Vegetation control to prevent fire and safety hazards (see the Weed and Brush Control Plan below)
2. Periodic guy wire adjustment
3. Replacement and related maintenance activities consistent with local, state and federal agency requirements

An Integrated Pest Management Plan will be prepared for herbicide use, as required by the new lease, and will be approved by Reclamation.

Transtower stores diesel fuel to run their generator in case of a power outage. 1,690 gallons would be stored at any one time. Any amount over 1,320 gallons of fuel requires a Spill Prevention, Control and Countermeasure plan (40 C.F.R. §112). Therefore, a spill plan will be required in the new lease.

Weed and Brush Control Plan

Tower and Equipment Building

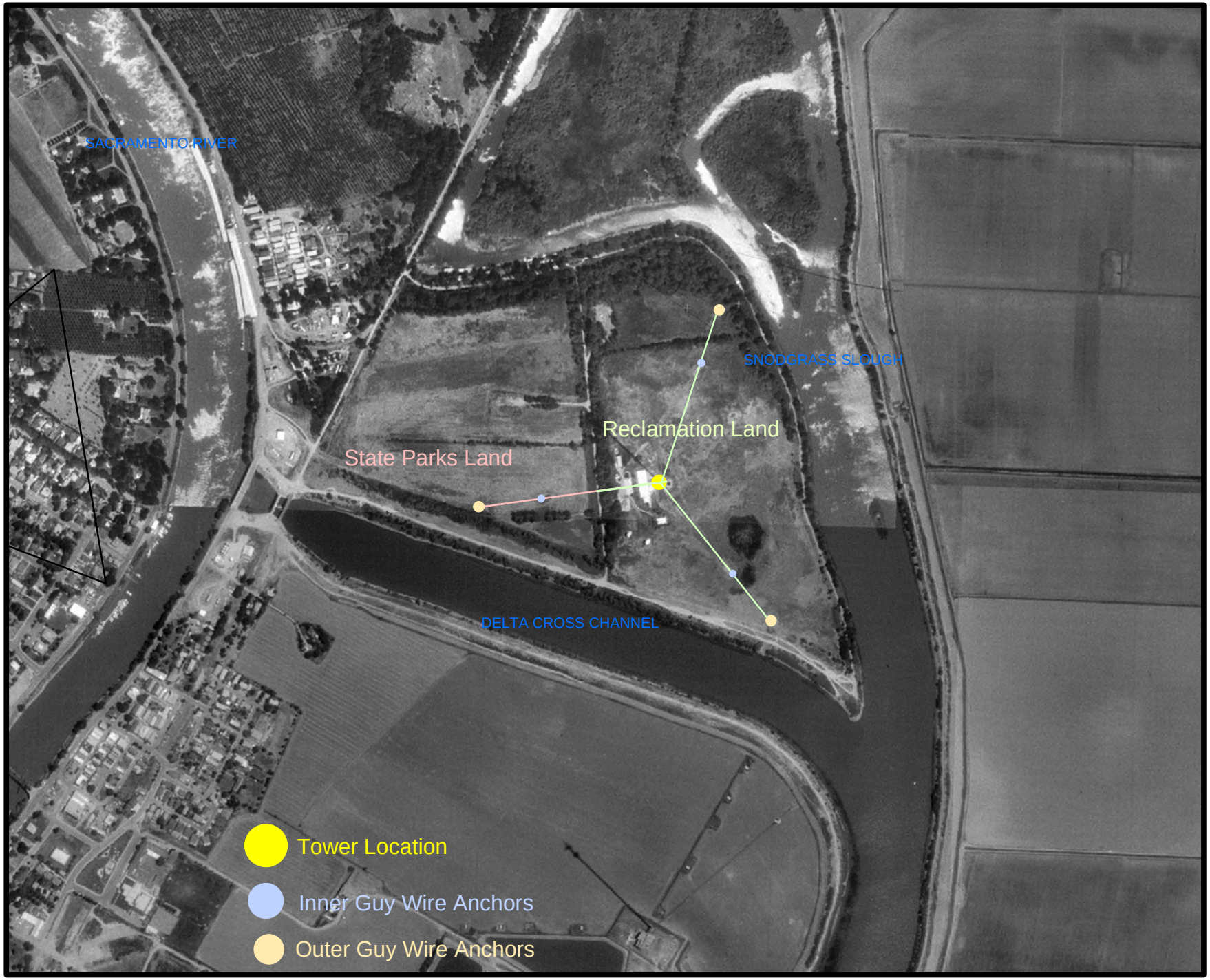
Transtower will maintain a perimeter of 300 feet around the exterior of the equipment building (which measures 151' x 51') and a fenced area immediately behind the building. The tower and

emergency generator are located within the fenced area. The perimeter area will be maintained through application[1] of approved herbicides (prior written approval by Reclamation), mowing

[1] Transtower will submit to Reclamation for approval an Integrated Pest Management Plan thirty days in advance of pesticide application. Pesticides used will be in accordance with the current registration, label direction, other directives regulating their use, and with applicable Reclamation policy, directives and standards.

July 23, 2009

Transtower Inc. Lease Renewal



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weeds, discing, chainsaws, and hand tools. The objective is to keep the perimeter area free of weeds, brush, and trees.

Guy Wire Anchors

Transtower will maintain a perimeter of 20 feet around the six guy wire anchors. There are three inner anchors, with dimensions of 16' x 25', located approximately 700' from the tower. There are also three outer anchors, with dimensions of 16' x 33', located approximately 1,070' from the tower. Two of the anchors are located on land owned by the State of California. The area around each anchor on the property will be maintained through application[1] of approved herbicides (prior written approval by Reclamation), mowing of weeds, chainsaws, and hand tools. The objective is to maintain the area free of weeds, brush and trees.

Land under Guy Wires

Transtower will maintain a path under the guy wires, from the tower to the anchors, that is 30 feet in width. The area will be maintained through application[1] of approved herbicides (prior written approval by Reclamation), mowing of weeds, chainsaws, and hand tools. The objective will be to maintain the area free of weeds, brush and smaller trees, while maintaining the integrity of heritage oak trees present in the area. It is possible that, in the future, more comprehensive brush or tree removal may become necessary in order to repair or replace guy wires in the interest of tower integrity and public health and safety. In such circumstances, a biological assessment of such activities will be prepared by a biologist approved by the Service and DFG and then the clearing plan will follow the recommendations of the biologist[2].

Conservation Measures

The following conservation measures are hereby incorporated into the project description.

Giant Garter Snake

1. Movement of vehicles and equipment shall be confined to existing roadways as much as possible to minimize habitat disturbance.
2. Discing shall preferentially be conducted between May 1 and October 1. This is the active period for giant garter snakes and direct mortality is lessened, because snakes are expected to actively move and avoid danger. Between October 2 and April 30 contact the USFWS's Sacramento Fish and Wildlife Office and the DFG Central Valley Bay-Delta Branch to determine if additional measures are necessary to minimize and avoid take.
3. Mowing and herbicide application shall preferentially be done during the giant garter snake's inactive period (October 2 and April 30), because snakes are more likely to be underground and therefore less at risk.
4. An Integrated Pest Management Plan will be prepared and it will be approved by a qualified Reclamation biologist.
5. A Spill Plan will be required by the new lease and will be approved by Reclamation.
6. Clearing will be confined to the minimum area necessary to prevent fire and safety hazards and to protect the tower and associated structures. Giant garter snake habitat to be avoided shall be temporarily flagged prior to maintenance activities and designated within or adjacent to the project area as Environmentally Sensitive Areas. These areas shall be avoided by all maintenance personnel.

[2] If this becomes necessary, it will be subject to a separate environmental analysis, including analysis under Section 7 of the ESA and under the National Environmental Policy Act.

7. Maintenance personnel shall receive USFWS- and DFG-approved worker environmental awareness training. This training will instruct workers to recognize the giant garter snake and its habitat(s).
8. The project area shall be surveyed for giant garter snakes 24 hours prior to maintenance activities. Survey of the project area shall be repeated if a lapse in maintenance activity of two weeks or greater has occurred. If a snake is encountered during work, activities shall cease until appropriate corrective measures have been completed or it has been determined that the snake will not be harmed. Report any sightings and any incidental take to the USFWS immediately by telephone at (916) 414-6600 and to DFG (State Dispatch) at (916) 445-0045.

Migratory Birds

1. Transtower shall, on an ongoing basis, review the measures to minimize adverse impacts and to protect migratory birds adopted by the Federal Communications Commission (FCC). Should such adopted measures be relevant to the Proposed Action, those new measures, or "Best Management Practices," shall be deemed applicable to the project area and will be applied to the subject tower in this evaluation.

Project Location

The site (T5N, R4E, Sections 25, 35 and 36) is located primarily within the Isleton 7.5 USGS quadrangle and partially within the Thornton quadrangle (one guy anchor on Reclamation's land). The Courtland and Bruceville quadrangles border the northern portion of the site. Please see Figure 1 for an aerial photo of the site.

The area of effect is defined as the land leased to Transtower, Inc. by both Reclamation and State Parks, plus the lighted space around the tower (an airspace that includes the tower and guy wires). This encompasses access roads, areas subject to vegetation control, guy wire adjustment, and replacement and maintenance activities, as well as a 100-yard buffer on the ground around these areas. Any areas that might be subject to herbicide runoff are also part of the area of effect. The 100-yard buffer is the distance from which human activity may disturb wintering Greater Sandhill Cranes. A review of relevant literature indicates that birds are not drawn toward lighted towers from a far distance, but rather birds that happen to encounter the lighted space around the tower become trapped in it (Graber 1968; Avery *et al*. 1976; Larkin and Frase 1988). Therefore, above-ground level, the area of effect also includes the tower's lighted space. The area of effect does not include the waters of the Sacramento River, Delta Cross Channel or Snodgrass Slough.

The transmission tower and appurtenant structures, built in 1962, are located on the Delta Cross Channel right-of-way, east of the channel inlet between the towns of Walnut Grove and Locke within Sacramento County. The site is bordered by Snodgrass Slough. 46.4 acres of Reclamation-owned land are leased to Transtower, Inc. The project area on Reclamation-owned land includes an equipment building and two residences (for security reasons), fences for protection of buildings, facilities for the provision of electric power and telephone service, towers, guy anchors and wires, and appurtenances, roads, and a well for domestic water. The largest building is a three-section transmitter building; KCRA, KXTV and KOVR each occupy one section.

There are eight lights in total for on-ground security lighting. Four are mounted on the front of the transmitter building. The other four are behind the building inside the fenced area, mounted

as follows: one is on a rear corner of the building, two are on the tower itself, and one is mounted on the small utility shed adjacent to the tower. All of the lights are downshielded. These are halogen lights (L. Larsen, pers. comm. to S. McDonald).

The site is surrounded by levees and the Reclamation-owned property and State Parks-owned property are separated by a road. From the levee road dividing the two properties, there is an access road that splits in two; one fork leads to the tower and buildings. Portions of the levee roads are paved and other portions are unpaved. Two of the guy wire anchors are located on land owned by State Parks. Approximately 32 acres of State Parks-owned land are leased to Transtower, Inc.

The tower is 1,549' above ground level (AGL), including the top-most beacons. Per Federal Aviation Administration (FAA) requirements for a tower of this height, there are five sets of three L-810 red steady-burning obstruction lights, situated in-between pairs of L-864 2,000cd (medium-intensity) red omnidirectional flashing beacons, with three L-864 beacons at the top. Due to the great height of the tower, it is supported by three sets of guy wires, with six concrete anchors in total. There are three inner anchors, with dimensions of 16' x 25', located approximately 700' from the tower. There are also three outer anchors, with dimensions of 16' x 33', located approximately 1,070' from the tower.

The tower is located in an antenna farm area, which is defined by the FAA as an area where antenna structures may be grouped to localize their effect on the use of navigable airspace. Four other towers exist in the immediate vicinity; two have both steady incandescent and blinking red lights and two have white strobe lights (S. McDonald, pers. obs.).

Related Action

The California Department of Parks and Recreation (State Parks) has a lease of land with Transtower, Inc. for one of the sets of guy wires associated with the tower, on the Delta Meadows State Park. State Parks is also proposing to renew its lease with Transtower, Inc. This lease is similar to that between Reclamation and Transtower, Inc. (K. Dipinto, pers. comm. to S. McDonald). The piece of land owned by State Parks is that in the southwestern corner of Figure 1 (marked with a pink line instead of green). The Weed and Brush Control Plan also applies to State Parks land in the area of effect.

Section 3 Affected Environment and Environmental Consequences

3.1 Biological Resources

3.1.1 Affected Environment

Special-status species are plants and animals that are legally protected under the State and Federal Endangered Species Acts or other regulations, and other species that are considered rare by the scientific community. A habitat assessment/species inventory was conducted in the area of effect by Certified Wildlife Biologist Hal Cribbs on February 21, 2007, February 20, 2008 and April 14, 2008. According to the report, large parts of the area of effect have a dense tree and shrub overstory that includes willows (*Salix* spp.), cottonwoods (*Populus fremontii*), California sycamore (*Plantanus racemosa*), interior live oak (*Quercus wislizeni*), scrub oak (*Q. berberidifolia*), black oak (*Q. kelloggii*) and other species. Common grass species include several invasive non-native species, such as Johnson grass (*Sorghum halepense*), wild oats (*Avena fatua*), slender wild oats (*A. barbata*), rip-gut brome (*Bromus diandrus*), red brome (*B. madritensis* ssp. *rubens*), Bermuda grass (*Cynodon dactylon*), dallis grass (*Paspalum dilatatum*), and Italian ryegrass (*Lolium perenne*). Forb species include wild mustard *(Brassica campestrisy*, star thistle (*Centaurea solstitiatis*), chicory (*Cichorium intybus*) horseweed (*Conyza canadensis*), fennel (*Foeniculum vulgare*), bur clover (*Medicago arabica*), plaintain (*Plantago major*), cocklebur (*Xanthium strumarium* var. *canadense*), knotweed (*Polygonum* spp.), and dock (*Rumex* spp.). Small seasonally wet drainages occur on-site. No vernal pools were documented in the area of effect.

A combined species list was obtained from the USFWS for the Isleton, Thornton, Courtland and Bruceville quadrangles at http://sacramento.fws.gov/es/spp_list.htm on July 27, 2009 (document number: 090727060029). The species list contained 10 species under USFWS's jurisdiction and four species under the purview of the National Marine Fisheries USFWS. Please see Table 1 below for a list of these species.

Table 1. Federally listed species and critical habitat – Isleton, Thornton, Courtland and Bruceville quadrangles

Common Name	Scientific Name	Listing Status	Occurrence Potential in Area of Effect	Critical Habitat	Critical Habitat in Area of Effect
Conservancy fairy shrimp	*Branchinecta conservatio*	Endangered	none-no vernal pools	Designated	No
delta green ground beetle	*Elaphrus viridis*	Threatened	none-no vernal pools	Designated	No
vernal pool fairy shrimp	*Branchinecta lynchi*	Threatened	none-no vernal pools	Designated	No
vernal pool tadpole shrimp	*Lepidurus packardi*	Endangered	none-no vernal pools	Designated	No
valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	Threatened	none-no elderberry shrubs in or within 100' of footprint (some within 200')	Designated	No
North American green sturgeon (NMFS)	*Acipenser medirostris*	Threatened	none-no effects on permanent waterways	Proposed	No
delta smelt	*Hypomesus transpacificus*	Threatened	none-no effects on permanent waterways	Designated	No
Central Valley steelhead (NMFS)	*Oncorhynchus mykiss*	Threatened	none-no effects on permanent waterways	Designated	No

Common Name	Scientific Name	Listing Status	Occurrence Potential in Area of Effect	Critical Habitat	Critical Habitat in Area of Effect
Central Valley spring-run Chinook salmon (NMFS)	*Oncorhynchus tshawytscha*	Threatened	none-no effects on permanent waterways	Designated	No
Sacramento River winter-run Chinook salmon (NMFS)	*Oncorhynchus tshawytscha*	Endangered	none-no effects on permanent waterways	Designated	No
California tiger salamander, Central DPS	*Ambystoma californiense*	Threatened	none-no vernal pools or other large seasonal ponds	Designated	No
California red-legged frog	*Rana aurora draytonii*	Threatened	none-species doesn't occur on valley floor/in Delta	Designated	No
giant garter snake	*Thamnophis gigas*	Threatened	may occur-nearby record & suitable habitat	No	No
California clapper rail[3]	*Rallus longirostris obsoletus*	Endangered	none-restricted to salt and occasionally brackish marsh habitat	No	No

A list of sensitive species and habitats that have been recorded in the four quadrangles that encompass or border the area of effect was also compiled from the California Natural Diversity Database (CNDDB) (January 2009 data). Please see Table 2 for this information.

The Western Yellow-billed Cuckoo (a candidate for listing under the ESA and listed as Endangered under the CESA) may also migrate through the area of effect, as the species is known to nest further north in the Sacramento Valley. In addition, during the February 20, 2008 site visit, Sandhill Cranes were heard in the area of effect. Flocks may contain both Lesser and Greater Sandhill Cranes; Greater Sandhill Cranes are listed as Threatened under CESA and are Fully Protected.

Table 2. List of sensitive species and habitats that have actually been observed in the Isleton, Thornton, Courtland and Bruceville quadrangles (CNDDB, January 2009)

Quad Name	Scientific Name	Common Name	State Status	DFG[4]	CNPS List[5]
Courtland, Bruceville	*Taxidea taxus*	American badger	None	None	N/A
Isleton, Thornton, Courtland, Bruceville	*Carex comosa*	bristly sedge	None	N/A	2
Thornton, Courtland, Bruceville	N/A	Coastal and Valley Freshwater Marsh	None	N/A	N/A
Isleton, Thornton	*Limosella subulata*	Delta mudwort	None	N/A	2
Isleton	*Hypomesus transpacificus*	Delta smelt	Threatened	N/A	N/A
Isleton, Thornton, Courtland, Bruceville	*Lathyrus jepsonii* var. *jepsonii*	Delta tule pea	None	N/A	1B
Thornton, Courtland, Bruceville	*Thamnophis gigas*	giant garter snake	Threatened	N/A	N/A
Bruceville	N/A	Great Valley Mixed Riparian Forest	None	N/A	N/A
Thornton, Bruceville	N/A	Great Valley Valley Oak Riparian Forest	None	N/A	N/A
Isleton, Thornton, Bruceville	*Lilaeopsis masonii*	Mason's lilaeopsis	Rare	N/A	1B
Isleton, Courtland	*Juglans hindsii*	Northern California black walnut	None	N/A	1B
Bruceville	N/A	Northern Hardpan Vernal Pool	None	N/A	N/A
Isleton, Thornton, Bruceville	*Actinemys marmorata*	northwestern pond turtle	None	SSC	N/A

[3] The Virginia Rail may occur in the area of effect, and can co-occur with the California Clapper Rail, but unlike the California Clapper Rail, the Virginia Rail is not restricted to salt and brackish marshes and may also use freshwater marshes.
[4] SSC—Species of Special Concern
[5] List 1B: Plants Rare, Threatened, or Endangered in California and elsewhere
List 2: Plants Rare, Threatened, or Endangered in California, but more common elsewhere

Quad Name	Scientific Name	Common Name	State Status	DFG[4]	CNPS List[5]
	marmorata				
Bruceville	*Hydrochara rickseckeri*	Ricksecker's water scavenger beetle	None	None	N/A
Isleton	*Anthicus sacramento*	Sacramento anthicid beetle	None	None	N/A
Courtland	*Pogonichthys macrolepidotus*	Sacramento splittail	None	SSC	N/A
Isleton	*Sagittaria sanfordii*	Sanford's arrowhead	None	N/A	1B
Isleton, Thornton, Courtland, Bruceville	*Scutellaria lateriflora*	side-flowering skullcap	None	N/A	2
Isleton	*Symphyotrichum lentum*	Suisun Marsh aster	None	N/A	1B
Isleton, Thornton, Courtland, Bruceville	*Buteo swainsoni*	Swainson's Hawk	Threatened	N/A	N/A
Bruceville	*Agelaius tricolor*	Tricolored Blackbird	None	SSC	N/A
Bruceville	*Desmocerus californicus dimorphus*	valley elderberry longhorn beetle	None	None	N/A
Bruceville	N/A	Valley Oak Woodland	None	N/A	N/A
Bruceville	*Lepidurus packardi*	vernal pool tadpole shrimp	None	None	N/A
Isleton, Thornton, Courtland	*Actinemys marmorata*	western pond turtle	None	SSC	N/A
Isleton	*Lasiurus blossevillii*	western red bat	None	SSC	N/A
Courtland	*Elanus leucurus*	White-tailed Kite	Fully Protected	N/A	N/A
Isleton, Thornton, Courtland, Bruceville	*Hibiscus lasiocarpus*	woolly rose-mallow	None	N/A	2

Species and Habitats not Expected to Occur in the Area of Effect

For Federally listed species and critical habitats that don't occur in the area of effect, see Table 1. Information for non-Federally-listed species and sensitive habitats is summarized in the remainder of this section.

The valley elderberry longhorn beetle requires elderberry shrubs with stems at least one inch in diameter at ground level. According to survey work done in the area of effect in winter and spring of 2008, there are no elderberry shrubs within 100' of proposed activities (H. Cribbs, pers. comm. to S. McDonald), although a field visit by Reclamation for another project has recently found the plants within approximately 200' or so. The USFWS uses 100 ' as a buffer distance for avoidance of indirect effects on the species (USFWS 1999).

Of the plants in Table 2, bristly sedge and the side-flowering skullcap have CNDDB polygons that overlap the area of effect. The other forbs are generally restricted to tidal marsh habitat, or the banks of the Sacramento River. The Northern California black walnut was not noted during the site surveys (see attached report). Coastal and Valley Freshwater Marsh occurs within the area of effect, but outside of the project footprint. Northern Hardpan Vernal Pools and the vernal pool tadpole shrimp do not occur in the area of effect. Valley Oak Woodland does not occur in the area of effect, according to the report prepared by Hal Cribbs and Associates (however, although there are no CNDDB polygons, elements of Great Valley Mixed Riparian Forest and Great Valley Valley Oak Riparian Forest are present).

The Sacramento anthicid beetle is not known from the area of effect and is not expected, because it is restricted to sand dunes in the Sacramento-San Joaquin Delta. According to the survey report from Hal Cribbs and Associates, suitable habitat in the area of effect is lacking for the western pond turtle/northwestern pond turtle. The permanent waters of the Sacramento River, Delta Cross Channel, and Snodgrass Slough are not part of the area of effect. Therefore, there is

no habitat in the area of effect for the Sacramento splittail. The American badger generally occurs in areas with open, drier ground, and therefore would not be expected in the area of effect.

Species within the Area of Effect

The Delta Cross Channel and Snodgrass Slough provide permanent aquatic habitat for the giant garter snake, but other small drainages on-site are seasonal and would therefore not be expected to maintain populations of prey, such as small fish. There is a CNDDB record from 1992; George Hansen observed an unknown number of giant garter snakes in the vicinity of Snodgrass Slough. Upland areas within 200' of the Delta Cross Channel and Snodgrass Slough would be considered to be upland habitat (this is the distance within which the majority of upland habitat use occurs, although snakes may be found as far away as 820' [Wylie *et al*. 1997]). These upland sites may provide vegetative cover and basking sites that aid in thermoregulation, and burrows and crevices may be used for overwintering or retreat sites.

The last known population of Western Yellow-billed Cuckoos in the Central Valley breeds along part of the Sacramento River. There are only 73 patches of riparian habitat exceeding 10 ha in extent on the 100 mile stretch of the Sacramento River between Red Bluff and Colusa (Halterman 1991). It is not known for sure what the migration path is for birds that breed along the Sacramento River, but it could include the area of effect (S. Laymon, pers. comm. to S. McDonald).

Migratory bird species which have been seen or heard (see Table 2 and subsequent text, as well as the report from Cribbs and Associates) in or near the area of effect include the Swainson's Hawk, Red-tailed Hawk, Black-shouldered Hawk, Northern Harrier, American Kestrel, White-tailed Kite, Tricolored Blackbird and Greater Sandhill Crane, Canada Goose, Tundra Swan, Mallard and Green-winged Teal. Virginia Rails and American Coots are known from the Sacramento River, Delta Cross Channel and Snodgrass Slough. According to the attached report from Cribbs and Associates, based on suitability of habitat, the Long-billed Curlew, American Avocet, Killdeer, Great Egret, Great Blue Heron, Black-crowned Night Heron, Green Heron, Belted Kingfisher and American Bittern may occur in nearby agricultural fields and canals. Although Tricolored Blackbirds were not found on-site during surveys the species has an itinerant breeding habit which makes it difficult to assess use based on one or a few surveys.

Bats that may inhabit the area of effect include the the pallid bat (*Antrozous pallidus*), western red bat (*Lasiurus blossevillii*), and the Yuma myotis (*Myotis yumanensis*). The pallid bat is a State Species of Special Concern. The pallid bat is characteristically a species of deserts and arid grasslands (Hermanson and O'Shea 1983), but may also inhabit oak woodlands and agricultural areas. Reclamation is not aware of any records of the pallid bat in the area of effect, but it has the potential to occur there. The western red bat is a proposed State Species of Special Concern and appears to have reduced abundance compared with historical levels. The western red bat is characteristically found in riparian habitat, especially Central Valley cottonwood, sycamore, and willow riverine galleries. Red bats are considered "tree" bats; roost sites are in the foliage of trees and shrubs, and possibly in leaf litter on the ground. Suitable habitat for this species occurs in the project area, and there is a nearby CNDDB record. The Yuma myotis is relatively common in California but is a Federal species of concern. The Yuma myotis occurs throughout the State and is closely associated with foraging areas at water sources such as reservoirs, rivers, streams, and ponds, more so than any other bat species in North America (Barbour and Davis

1969). The Department of Ornithology & Mammalogy, California Academy of Sciences has two 1979 specimens reported as being from the Delta Meadows State Park.

There is a large body of literature that documents bird kills at lighted human-made structures (including communication towers) (see Gauthreax and Belser 2006 and USFWS 2007 for recent reviews). Both lit guyed and unguyed communication towers are known to kill birds, even those towers that are relatively short (380-480 ft AGL), but more birds are killed at tall (> 1,000 ft AGL) lit towers with guy wires (Gehring *et al*. 2006). There can be variation in the numbers of birds killed at a given tower from year to year (Crawford and Engstrom 2001). Security lights at buildings may also attract birds and result in collisions (which may be reduced by downward shielding of the lights) (Reed *et al*. 1985). The most frequently killed species are of the warbler, thrush and vireo families (Shire *et al*. 2000). Greater Sandhill Cranes are vulnerable to power line collisions (Walkinshaw 1956; Tacha *et al*. 1978), particularly in areas with high winds and fog ((Tacha *et al*. 1978). Pogson *et al*. (1988) reported that among unnatural causes of mortality in Greater Sandhill Cranes, power line collisions represent the largest source. Morkill and Anderson (1991) found that markers reduced Sandhill Crane collisions. The numbers of birds killed, representing only one source of mortality (along with loss from wind turbines, predation, disease and reduction, fragmentation and degradation of habitat) may be substantial.

The Service Guidance on the Siting, Construction, Operation and Decommissioning of Communications Towers (2000) recommends that white lights be preferentially used, with the minimum number of lights, minimum intensity, and minimum number of flashes per minute (longest duration between flashes) allowable by the FAA. Color overall appears to be less important, but the best choice appears to be white strobes (L-865) followed by red strobes (L-864 strobes) and then blinking red incandescent lights (L-864 beacons) (USFWS 2007).

The only local study of which Reclamation is aware is one that was done on two towers in 2001 (Kerlinger 2001). This study was conducted at the same tower farm on which the tower in this evaluation is located, but it involved other towers. The study concluded that "No mass mortality events involving tens of hundreds of birds were found, as is the case with some eastern towers. These facts suggest that mortality is typically low at these towers and not likely to impact any species significantly." The suggested reason for the low numbers killed in comparison with towers in the eastern U.S. was because of differences in densities of migrating birds. Although this study was a short-term study during one relatively dry spring period, it is the best information available for the local area.

3.1.2 Environmental Consequences

No Action

Under the No Action Alternative, Reclamation would not renew its lease with Trantower. The tower and associated structures (e.g. anchors and buildings) would be removed and related maintenance would cease. This would result in some reduction of adverse impacts on the giant garter snake, migratory birds, and likely a very small reduction in adverse effects on certain bat species.

Proposed Action

Under the Proposed Action, there would be adverse impacts on the giant garter snake, migratory birds, and to a lesser extent, on bat species such as the western red bat.

Giant Garter Snake. The Proposed Action may indirectly adversely affect the giant garter snake. Application of herbicides could be harmful to snakes in upland sites. Giant garter snakes utilizing these areas could contact toxins. Discing could injure or kill snakes if they are utilizing upland habitat, and to a lesser degree, when they travel between aquatic habitat and hibernation spots. Mowing could injure or kill snakes that are active above-ground in upland habitat. Herbicide application and mowing would be most harmful during the giant garter snake's active period (usually May until October), while discing would be of greatest concern during the inactive period. Vegetation removal may reduce cover available to snakes in upland areas. Active snakes also may be at risk if they are crossing or basking on an access road while moving vehicles are present.

The estimated amount of potentially occupied giant garter snake habitat that may be affected is 6.69 acres. This estimate was obtained by overlaying the amount of land subject to vegetation management on the portion of the project footprint that is within the maximum overwintering distance of 820' from the aquatic habitat (Wylie *et al*. 1997) of the Delta Cross Channel and Snodgrass Slough. Most overwintering occurs within 200' (Wylie et al. 1997), but the maximum known value was used as a conservative assumption, and using this distance causes the entire footprint to be included. Other adverse effects would not be in the form of harm (such as the risk of a vehicle hitting a snake basking on a road). The incorporated conservation measures will minimize both the potential for harm, and the potential for injuring or killing a giant garter snake. This will prevent a population-level effect.

Migratory Birds. Birds that migrate at night (such as warblers, vireos, thrushes, and the Western Yellow-billed Cuckoo) may be indirectly adversely affected. These birds may be killed by directly striking guy wires, the tower, each other, or predators may kill stunned or injured birds that have fallen to the ground. These types of events are expected during periods of inclement weather, which would typically occur during the late fall, winter and early spring. During other times, there may be incidental "blind strikes" by birds that simply fail to see a guy wire in time to avoid it.

Bird species that are active during the day in the area of effect, such as the Swainson's Hawk, White-tailed Kite, Tricolored Blackbird, and Greater Sandhill Crane may be indirectly adversely affected if they fail to see guy wires and strike them. They may also be subject to some degree of disturbance by vegetation control and other maintenance activities. Swainson's Hawks may be at risk during migration. Greater Sandhill Cranes fly too high during migration to come near the tower or guy wires, but during their daily activities in the winter, they fly much closer to the ground and could be at risk.

The one study performed in the area of effect would indicate that there is not a risk of a population-level effect, although it would be desirable to have more data. It does seem to be the case that, unlike in some mid-western and eastern areas, most inclement weather in this area occurs during the winter (Cline and García 2007), which would not include the migration period for many of the bird species at issue. Also, the guy wires are larger in diameter than those wires that were found to go unseen by Greater Sandhill Cranes in the Morkill and Anderson (1991) study. Therefore, population-level impacts are not anticipated.

The communication tower at issue for this Proposed Action is already constructed, and the lighting used on the tower is required by the FAA. It may be that the FCC will adopt future

measures that would apply to this existing tower, but no measures are currently available to apply to the tower.

Bats. The USFWS (2007) has expressed concerns about the effects of communication towers on bats, noting that two wind energy facilities in the eastern United States have recently been documented as causing high levels of mortality, and that bat carcasses are found during bird mortality studies at communication towers. Tree bats, which migrate long distances, seem to be the most frequently killed species and have been found dead in large numbers at utility-scale (>1 MW generating capacity) wind energy facilities along forested ridgetops in the eastern United States (Kunz *et al*. 2007).

However, unlike the case with the blades of wind turbines, communication towers and all of their associated fixtures are stationary, and so bats are expected to only occasionally have an accidental strike (J. Szewczak, pers. comm. to S. McDonald). It should be noted that it is currently unknown if bats that migrate use echolocation during migration, independent of their foraging activities, so in the area of effect, the western red bat might be somewhat more at risk than the other species. If bats encounter the tower or guy wires while foraging, their echolocation would allow the bats to detect the structures and avoid them.

Bat species that utilize the area of effect may be subject to some minor indirect adverse effects, mostly from those few instances in which a bat fails to detect a guy wire, which may be more likely during migration, rather than during foraging activity. This is not expected to occur very frequently and would not result in population-level impacts

Cumulative Effects. In the past, large areas of wetland and riparian habitat have been lost in the general vicinity of the area of effect, as a result of agricultural and urban development. In fact, the purpose of the Delta Meadows property is to preserve and protect one of the last remaining areas of the northern Sacramento-San Joaquin River Delta that exhibits remnants of the natural conditions that existed prior to Euro-American settlement. The property's waterways, located on the Pacific flyway and influenced by Pacific Ocean tides through the lower Sacramento River, contain permanent and seasonal water areas, as well as adjacent uplands that support a variety of riparian plant and animal life.

Current and future cumulative effects that may occur in the area of effect include management activities at the Delta Meadows State Park, and activities at the four nearby towers in the antenna farm area. Management activities at Delta Meadows State Park (unrelated to the communication tower), would be subject to environmental review (e.g. the California Environmental Quality Act) and are likely to contain measures to reduce impacts on special-status species and habitats. Although the other four towers are not identical to the tower on Reclamation-owned land, their operation and associated maintenance would also be expected to result in adverse impacts on the giant garter snake, migratory birds, and bats. A rough estimate would be that taken cumulatively, these impacts would be five times those expected from the (indirect) effects of the Proposed Action. Incorporated measures will reduce cumulative effects on the giant garter snake and more common species. Only a minimal cumulative impact is expected for migratory birds as a result of the Proposed Action.

Section 4 Consultation and Coordination

4.1 Endangered Species Act (16 USC §1531 et seq.)

Section 7 of the ESA requires Federal agencies, in consultation with the Secretary of the Interior/Commerce, to ensure that their actions do not jeopardize the continued existence of endangered or threatened species, or result in the destruction or adverse modification of the critical habitat of these species.

Reclamation has determined that the Proposed Action may adversely affect the giant garter snake. The USFWS was provided with a draft copy of the biological evaluation for review and comment. Reclamation will send the final evaluation to the USFWS with a request for formal consultation, and this Environmental Assessment will not be finalized until consultation has been completed. No anadromous fishes or their critical habitat occur in the affected area, and so no consultation with the National Marine Fisheries Service is needed.

4.2 Executive Order 11988 – Floodplain Management and Executive Order 11990 – Protection of Wetlands

Executive Order 11988 requires Federal agencies to prepare floodplain assessments for actions located within or affecting flood plains. The project would occur within a floodplain. However, the Proposed Action does not increase the risk of flood damage to life or property, as it will result in a continuation of the use of Reclamation land for a communication tower and associated structures, but does not encourage or allow any urban development.

Executive Order 11990 directs Federal agencies to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities for (1) acquiring, managing, and disposing of Federal lands and facilities; and (2) providing Federally undertaken, financed, or assisted construction and improvements; and (3) conducting Federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities. The order does not apply to the issuance by Federal agencies of permits, licenses, or allocations to private parties for activities involving wetlands on non-Federal property. There may be some small impacts on the water quality of seasonal wetlands on-site, but these would be minimized greatly by the implementation of a Spill Plan and Integrated Pest Management Plan.

4.3 Executive Order 13186 – Responsibilities of Federal Agencies to Protect Migratory Birds

Executive Order 13186 directs Federal agencies to take certain actions to further implement the Migratory Bird Treaty Act. Each Federal agency taking actions that have, or are likely to have, a measurable negative effect on migratory bird populations was directed to develop and implement, within two years of the order date (January 10, 2001), a Memorandum of Understanding (MOU) with the USFWS to promote the conservation of migratory bird

populations. Reclamation has not signed an MOU with the USFWS regarding migratory birds. We reviewed Executive Order 13186 and determined that, at that time, no MOU was appropriate. Nevertheless, the order states that notwithstanding the requirement to finalize an MOU within two years, each Federal agency is encouraged to immediately begin implementing the conservation measures set forth in the order, as appropriate and practicable.

The communication tower at issue for this Proposed Action has already been constructed, and the lighting used on the tower is that which is required by the FAA. It may be that the FCC will adopt future measures that would apply to this existing tower, but no measures are currently available to apply to the tower. So, although the continued existence of the tower presents some level of risk to migratory birds, which is believed to be relatively low due to local weather patterns, Reclamation is unable to implement the conservation measures set forth in the order.

4.4 Indian Trust Assets

The Proposed Action would not affect Indian Trust Assets (ITAs). The nearest ITA to the site is approximately 32 miles away (Ione Band of Miwok Indians).

4.5 Migratory Bird Treaty Act (16 USC §703 et seq.)

The Migratory Bird Treaty Act implements various treaties and conventions between the U.S. and Canada, Japan, Mexico and the former Soviet Union for the protection of migratory birds. Unless permitted by regulations, the Act provides that it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product, manufactured or not. Subject to limitations in the Act, the Secretary of the Interior (Secretary) may adopt regulations determining the extent to which, if at all, hunting, taking, capturing, killing, possessing, selling, purchasing, shipping, transporting or exporting of any migratory bird, part, nest or egg will be allowed, having regard for temperature zones, distribution, abundance, economic value, breeding habits and migratory flight patterns.

The Proposed Action has a low probability of affecting migratory birds, and no measures that have a certainty of being applied are available to reduce impacts. The FCC may or may not adopt new measures that could be applied to the tower in the future.

4.6 National Historic Preservation Act (15 USC §470 et seq.)

Section 106 of the NHPA requires Federal agencies to evaluate the effects of Federal undertakings on historical, archaeological and cultural resources. Federal agencies are required to consider the effects of their undertakings on historic resources, and to give the Advisory Council a reasonable opportunity to comment on those undertakings.

Reclamation has concluded that the proposed undertaking has no potential to affect historic properties pursuant to 36 CFR Part 800.3 (a) (1). If any new construction would occur under the new lease, Reclamation would have to evaluate the effects such construction would have on the

Delta Cross Channel, which is part of the Central Valley Project that is being nominated to the National Register of Historic Places. However, approval of the lease will not result in new ground disturbance or new construction.

Section 5 List of Preparers and Reviewers

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Adam Nickels, Archeologist, Bureau of Reclamation, Mid-Pacific Regional Office – reviewer

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